

Attorney Docket No. 10636-005001  
Appl. No. 09/658,215  
Amdt. dated July 30, 2003  
Reply to Office Action dated January 30, 2003

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Claims 1-3 (canceled)

Claim 4 (currently amended): ~~A constellation as in claim 3, further comprising a~~ A satellite system, comprising:

A1 a plurality of satellites in inclined elliptical orbits, each said satellite communicating with a portion of the Earth, at least a first group of said satellites being in common orbits having the same, first, repeating ground track, and a second group of said satellites being in common orbits having the same, second, repeating ground track, different than said first ground track, each said satellite communicating during only a portion of the elliptical orbit closest to apogee;

wherein each of said first and second ground tracks define active portions closest to apogee that follow populated portions on the earth; and ✓

✓  
a third group of said satellites being in common orbits having the same, third ground track, different than said first and second ground tracks.

Attorney Docket No. 10636-005001  
Appl. No. 09/658,215  
Amdt. dated July 30, 2003  
Reply to Office Action dated January 30, 2003

2.

Claim ~~5~~ (original): A constellation as in claim ~~4~~, wherein said first and second ground tracks are in the Northern Hemisphere, and said third ground track is in the Southern Hemisphere.

3.

A1  
Claim ~~5~~ (original): A communication system, comprising:  
a plurality of ground stations, each including communication equipment for communicating with a satellite in orbit; and

a plurality of satellites in respective orbits, said respective orbits including a first sub-constellation orbit with a plurality of satellites therein, each of said plurality of satellites following a repeating ground track that repeats an integral number of times each day and each repeating ground track optimized for covering more than one specific land mass on the earth, including a first sub-constellation optimized for covering first land masses in the Northern Hemisphere, a second sub-constellation optimized for covering second land masses in the Northern Hemisphere, and a third sub-constellation optimized for covering third land masses in the Southern Hemisphere.

4.

3

Claim ~~5~~ (original): A constellation as in claim ~~4~~ wherein each of said sub-constellations has 5 satellites therein.

Attorney Docket No. 10636-005001  
Appl. No. 09/658,215  
Amdt. dated July 30, 2003  
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[Claims 8-10 (canceled)]

Claim ~~11~~<sup>S</sup> (original): A communication system, comprising:  
a plurality of ground stations on respective land masses;  
and

A1  
a plurality of satellites in elliptical orbits, said  
plurality of satellites being in orbits in sub-constellations,  
each sub-constellation having a plurality of satellites and  
repeating ground tracks, which repeating ground tracks are each  
optimized to follow a plurality of said land masses, each  
satellite operating only during a predetermined percentage of  
its orbit closest to its apogee, where two of said sub-  
constellations cover land masses in the Northern Hemisphere and  
a third sub-constellation covers land masses in the Southern  
Hemisphere.

6.  
Claim ~~12~~<sup>S</sup> (original): A constellation as in claim ~~11~~<sup>S</sup> wherein  
a first sub-constellation has ground tracks covering with  
apogees covering Alaska, Western United States, Western Canada,  
Western Europe, West Africa, China and India, a second sub-  
constellation has ground tracks covering with apogees covering  
Eastern United States, Canada, Central America, Eastern Europe,

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Appl. No. 09/658,215  
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Africa, India and China, and the third sub-constellations with apogees covering South America, South Africa, Australia and New Zealand.

7.  
Claim ~~13~~ (original): A constellation as in claim ~~12~~ wherein said satellites transmit only during 60 percent of their orbit.

A1  
8.  
Claim ~~14~~ (original): A constellation as in claim ~~11~~ wherein said satellites are in 8 hour orbits and communicate for 2.4 hours on either side of their apogees.

9.  
Claim ~~15~~ (original): A constellation as in claim ~~11~~ wherein said satellites are approximately 3/4 of the height necessary for geosynchronous orbit or less.

[Claims 16-23 (canceled)]